

**Abstract**

This invention is directed to an *in vitro* system for rapidly and uniformly inducing immortalized neural crest cells to differentiate to vascular smooth muscle cells. As excessive proliferation of vascular smooth muscle cells is a phenotypic response to the development of occlusive arteriosclerotic disease, the *in vitro* system of this invention is used to identify molecular regulators of smooth muscle cell development and differentiation. As the molecular regulators of smooth muscle cell differentiation are identified, the invention also encompasses methods to isolate the genes coding for these regulators. This invention also relates to molecules identified through the use of the invention's *in vitro* system, as well as to compounds that inhibit or regulate the identified molecules.